GEORGIA INSTITUTE OF TECHNOLOGY — OFFICE OF CONTRACT ADMINISTRATION

PROJECT ADMINISTRATION DATA SHEET

[X] ORIGINAL [ ] REVISION NO. _____

Project No. A-3951 GTRI/~~GIT~~ DATE 9 / 7 / 84

Project Director: R. Gault ~~School~~/Lab STL

Sponsor: Celwave R.F., Inc.

Route 79 Marlboro, N.J. 07746

Type Agreement: Research Project Agreement #A-3951

Award Period: From 8/27/84 To 9/27/84 (Performance) 9/27/84 (Reports)

Sponsor Amount:	This Change	Total to Date
Estimated:	$ 3,956	$ 3,956
Funded:	$ 3,956	$ 3,956

Cost Sharing Amount: $ 0 Cost Sharing No: 0

Title: "Antenna Test Program"

ADMINISTRATIVE DATA OCA Contact Ralph Grede X4820

1) Sponsor Technical Contact:

Celwave, R.F., Inc.
Route 79
Marlboro, N.J. 07746

2) Sponsor Admin/Contractual Matters:

Celwave R.F., Inc.
Route 79
Marlboro, N.J. 07746

Defense Priority Rating: n/a Military Security Classification: n/a

(or) Company/Industrial Proprietary: none

RESTRICTIONS

See Attached n/a Supplemental Information Sheet for Additional Requirements.

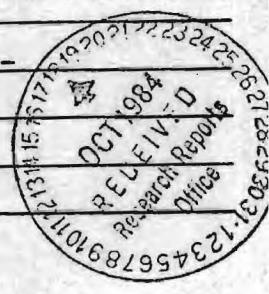
Travel: Foreign travel must have prior approval – Contact OCA in each case. Domestic travel requires sponsor approval where total will exceed greater of $500 or 125% of approved proposal budget category.

Equipment: Title vests with GTRC – However, none proposed

COMMENTS:

One (1) month period of performance

Celwave R.F., Inc. Purchase Order #22373-00 dated 8/16/84 - is governed by Research Project Agreement dated 8/27/84.



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FORM OCA 4:383

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Research Security Services
~~Reports Coordinator (OCA)~~
Research Communications (2)

GTRI
Library
Project File
Other I. Newton

GEORGIA INSTITUTE OF TECHNOLOGY OFFICE OF CONTRACT ADMINISTRATION

SPONSORED PROJECT TERMINATION/CLOSEOUT SHEET

Date 12/18/84

Project No. A-3951 ~~School~~/Lab STL

Includes Subproject No.(s)

Project Director(s) R. Gault GTRI / ~~GTRI~~

Sponsor Celwave R. F., Inc.

Title "Antenna Test Program"

Effective Completion Date: 9/27/84 (Performance) 9/27/84 (Reports)

Grant/Contract Closeout Actions Remaining:

- [ ] None
- [X] Final Invoice or Final Fiscal Report
- [ ] Closing Documents
- [ ] Final Report of Inventions
- [ ] Govt. Property Inventory & Related Certificate
- [ ] Classified Material Certificate
- [ ] Other

Continues Project No. Continued by Project No.

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Form OCA 60:1028

A-3951

ENGINEERING EXPERIMENT STATION
Georgia Institute of Technology
A Unit of the University System of Georgia
Atlanta, Georgia 30332

September 25, 1984

Mr. John Kingsbury
Celwave RF Inc.
Rt. 79
Marlboro, N.J. 07746

Dear John:

This letter is to report to you the results of our recent phase center measurements on your models 10085 and 10054 UHF antennas.

Each antenna was positioned near the center of the arc traveled by the probe antenna, as shown in Figure 1, and then moved about until relatively constant phase was detected over the full ±90° azimuth scanning range. The position of the arc center was then measured (arbitrarily referenced to the center of the rear surface of the enclosure). This position is defined as the apparent phase center of the antenna.

The positions of the phase centers are listed below for each antenna at each test frequency.

Model # 10054

Frequency (MHz)	Distance Forward of Rear Surface of Enclosure (inches)
440	5.85 ± .36
460	5.85 ± .36
480	6.15 ± .36

Model # 10085

Frequency (MHz)	Distance Forward of Rear Surface of Enclosure (inches)
930	3.40 ± .17
950	3.40 ± .17
970	3.40 ± .17

The tolerances shown are based on an arbitrary 5° position tolerance due to the subjective nature of the determination of the phase center and not physical measurement tolerances. Generally, phase errors of $<10°$ are of little consequence to the antenna patterns of arrays (with the exception of very narrow-beamed or low-sidelobe arrays) and for this reason positioning inaccuracies of as much as the

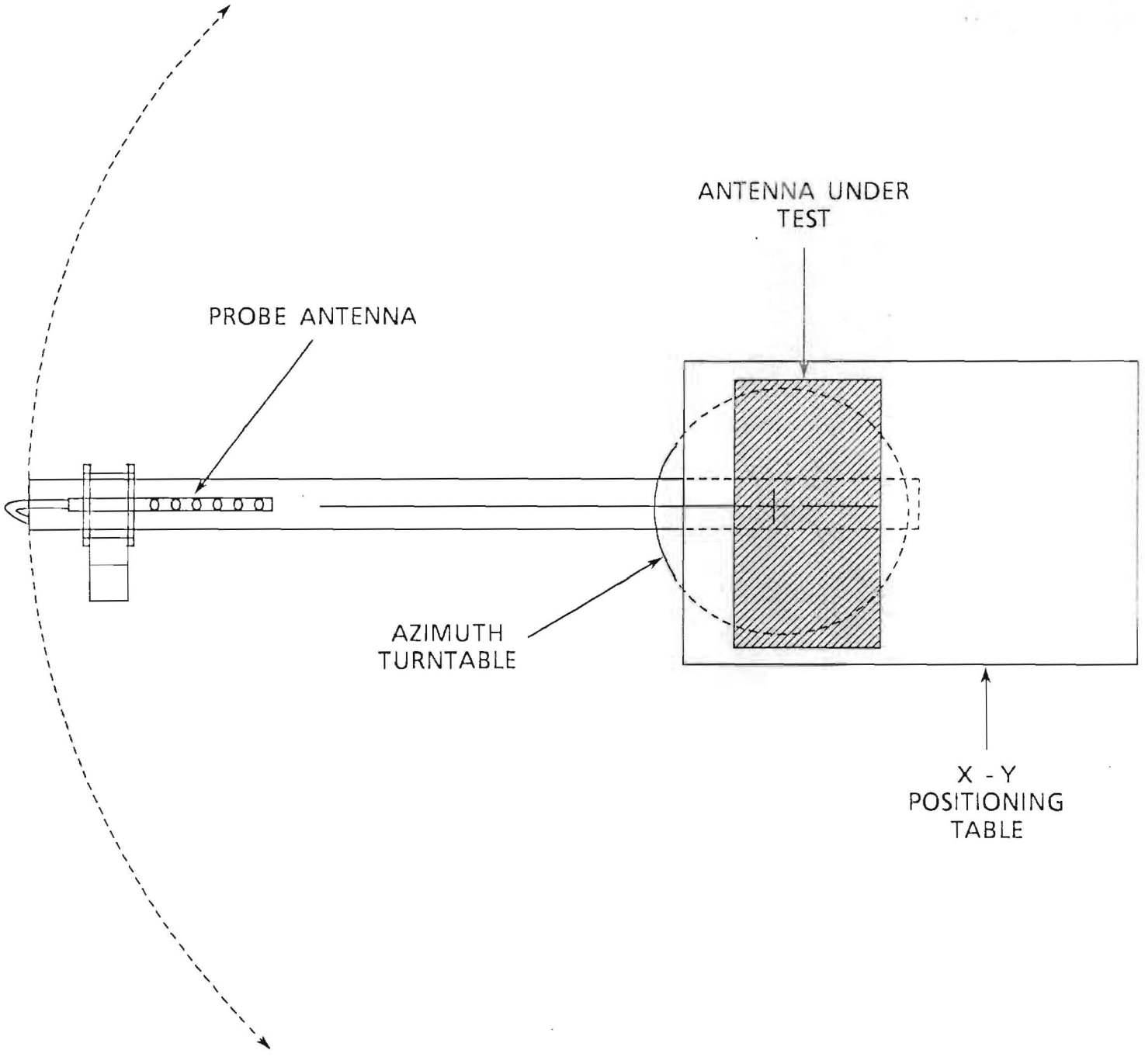

Figure 1. Phase Center Range (Top View, Absorber Not Shown For Clarity).

tolerances given will not noticably affect performance. Included in the phase patterns enclosed are several labeled "FOR EXAMPLE" which show how the curvature of the phase pattern varies with position and frequency.

The conclusion of this measurement task is that for all practical purposes the phase centers of these antennas coincides with the physical centers of the dipole arrays.

Please don't hesitate to call me at (404) 424-9692 if you have any further questions.

Sincerely,

Robert Gault

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